



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,049	10/28/2003	Yoshiaki Ito	008312-0306455	6750
909	7590	08/10/2004	EXAMINER	
PILLSBURY WINTHROP, LLP			COLON, GERMAN	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2879	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/694,049

Applicant(s)

ITO ET AL.

Examiner

German Colón

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-7 is/are rejected.
- 7) ☒ Claim(s) 4 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/28/03</u> .  | 6) <input type="checkbox"/> Other: ____                                     |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuyama et al. (EP 0 481 216) in view of Milili et al. (US 5,408,163).

Regarding claims 1 and 5, Okuyama discloses a CRT (see Fig. 4(a) ) comprising a vacuum envelope including a panel, a funnel fixed to the panel, a cylindrical neck fixed to a small-diameter end of the funnel, and a yoke mounting portion substantially in the shape of a truncated pyramid and ranging from the neck to an outer periphery of the funnel;

a deflection yoke which is mounted on the outside of the yoke mounting portion and deflects electron beams in horizontal and vertical direction,

the deflection yoke including a pair of saddle-type horizontal deflecting coils 2 located symmetrically with respect to a central axis, a magnetic core 4 coaxial with the central axis, located on an outer peripheral side of the horizontal deflecting coils, and having the shape of a truncated cone, and a pair of vertical deflecting coils 3 toroidally wound around the magnetic core,

wherein if the positions of a horizontal axis perpendicular to the central axis and the position of a vertical axis 6 perpendicular to the central axis and the horizontal axis are given by 0° and 90°, respectively, in the direction of the circumference of a circle around the central axis,

the winding of one of the vertical deflecting coils have a starting point on the horizontal-axis side within the range of  $5^{\circ}$  –  $30^{\circ}$  and being distributed intermittently from the starting point to  $90^{\circ}$  and wound symmetrically with respect to the vertical axis, and the respective windings of the one vertical deflecting coil and the other vertical deflecting coil being wound symmetrically with respect to a horizontal axis (see Fig. 10 in view of Fig. 4(b) and Page 5, lines 42-46). [The Examiner notes that while the reference's coordinate system positions the vertical axis 6 at  $0^{\circ}$  (see Fig. 4(b) ), for the purpose of examination, the  $0^{\circ}$  angle was consider with respect to the horizontal axis, i.e. the  $-90^{\circ}$  angle of Fig. 4(b).]

Okuyama discloses the saddle-type horizontal deflecting coils contouring the envelope of the CRT, but fails to expressly state the shape of said saddle-type horizontal deflecting coils being a truncated pyramid. However, in the same field of endeavor, Milili discloses a deflection yoke comprising a saddle-type horizontal deflecting coil having the shape of a truncated pyramid, and teaches such shape to achieve substantial horizontal astigmatism correction at the extremes of the major axis, which reduces misconvergence of the electron beams (see Col. 3, lines 13-26 in view of Fig. 9). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a truncated pyramid-shaped saddle-type horizontal deflecting coil in the deflection yoke of Okuyama with the purpose of achieving substantial horizontal astigmatism correction at the extremes of the major axis, which reduces misconvergence of the electron beams.

Okuyama-Milili discloses the claimed invention but is silent regarding the limitation of "an electron gun located in the neck of the vacuum envelope emitting electron beams toward a phosphor screen". However, Okuyama discloses the deflection yoke being used to deflect

electron beams. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the CRT of Okuyama with an electron gun in the neck portion, since Okuyama teaches the deflection yoke to deflect electron beams. Further, it is well known in the art that CRT comprise electron guns in a neck portion which emit electron beams toward a phosphor screen of a display.

Regarding claims 2 and 6, Okuyama discloses the vertical deflecting coils having a plurality of parts in which the winding distribution is close as the coil is wound and which are located near the ranges of  $20^{\circ}$  -  $40^{\circ}$  and  $60^{\circ}$  -  $80^{\circ}$  at the least (see Fig. 10 in view of Fig. 4(b), wherein  $-90^{\circ}$  represents the position of the horizontal axis, i.e.  $0^{\circ}$ , and  $0^{\circ}$  represents the vertical axis, i.e.  $90^{\circ}$ ).

Regarding claims 3 and 7, Okuyama discloses the horizontal deflecting coils having a large-diameter end and a small-diameter end, the small-diameter end having a bendless shape without any bends in a direction perpendicular to the central axis (see Fig. 4(a)).

#### ***Allowable Subject Matter***

3. Claims 4 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

The references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claims 4 and 8, and specifically comprising the limitation of “the deflection yoke comprises a coma coil located coaxially with the central axis of the horizontal

Art Unit: 2879

deflecting coils and at a distance from the small-diameter end of the horizontal deflecting coil in the direction of the central axis, wherein L1, L2 and L3 are set to have relations:

$$L1 > L2 > L3,$$

$$L3 = 0.6 \times L2 - 0.8 \times L2,$$

where L1 is an effective length of the horizontal deflecting coil in the direction of the central axis, L2 is the length of the core in the direction of central axis, and L3 is the distance between a small-diameter end of the core and the coma coil in the direction the central axis”.

### ***Prior Art of Record***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Nam (US 6,198,368) discloses a deflection yoke comprising a coma coil located coaxially with the central axis of the horizontal deflecting coils and at a distance from the small-diameter end of said horizontal deflecting coils.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
gc

Karabi Guharay